

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. Assignee has highlighted the amendments for ease of reference.

1. (Previously amended) A method of equalizing output current among a plurality of alternating current devices connected in parallel, the method comprising:

measuring an output current of each device, thereby generating a plurality of output current signals;

selecting an output current signal having the largest magnitude, designated the highest output current signal;

providing the highest output current signal to a control input of each device;

comparing the output current signal for each device to the highest output current signal;
and

adjusting the output current of each device to match the output current corresponding to the highest output current signal.

2. (Previously amended) A circuit for equalizing output current among a plurality of alternating current devices connected in parallel, the circuit comprising:

a plurality of current sensors, each having an output signal corresponding to an output current of a corresponding alternating current device;

a selection circuit having inputs receiving output signals from each current sensor and

- having an output signal corresponding to the current sensor output signal having the greatest magnitude;
 - a plurality of summing circuits, each having a first input receiving a corresponding current sensor output signal and having a second input receiving the selection circuit output signal, each summing circuit generating an output error signal corresponding to the difference between the selection circuit output signal and the corresponding current sensor output signal; and
 - a plurality of control circuits, each receiving as an input the corresponding error signal and adjusting the output current of the corresponding alternating current device to minimize the magnitude of the error signal.
3. (Previously amended) A power module comprising:
- a PWM-controlled inverter;
 - a current sensor, having an output signal corresponding to an output current of the power module;
 - a selection circuit having a first input receiving the output signal from the current sensor and having a second input receiving a signal corresponding to a highest output current of one or more other power modules connected in parallel with the power module, said selection circuit generating an output signal corresponding to larger of the current sensor output signal and the highest output current signal from the other power modules;

a summing circuit, having a first input receiving the current sensor output signal and a second input receiving the selection circuit output signal, the summing circuit generating an output error signal corresponding to the difference between the selection circuit output signal and the current sensor output signal; and

a PWM inverter control circuit, receiving as an input the error signal and adjusting a PWM signal supplied to the inverter so as to cause the output current of the power module to minimize the magnitude of the error signal.

4. (Original) An uninterruptible power supply comprising one or more power modules in accordance with claim 3 connected in parallel.

5. (Currently amended) A method of equalizing output current among a plurality of alternating current devices connected in parallel, the method comprising:

measuring an output power level of each device;

adding the output power levels for each device to arrive at a total output power;

dividing the total output power by the number of devices to derive an output power setpoint; and

adjusting the output power of each device to match the output power setpoint so that the plurality of devices have substantially the same output power.

6. (Currently amended) An uninterruptible power supply (UPS) comprising:

a UPS frame having a plurality of bays; **and**

at least one intelligent battery module having at least one battery string, a fuse, and a relay, all connected in series, the battery module further comprising a microprocessor based controller for monitoring and controlling the battery module components; **and**

wherein the battery modules may be accommodated in any bay of the UPS frame.

7. (Previously amended) The uninterruptible power supply of claim 6 further comprising one or more power modules including:

a PWM-controlled inverter a current sensor, having an output signal corresponding to an output current of the power module;

a selection circuit having a first input receiving the output signal from the current sensor and having a second input receiving a signal corresponding to a highest output current of one or more other power modules connected in parallel with the power module, said selection circuit generating an output signal corresponding to larger of the current sensor output signal and the highest output current signal from the other power modules;

a summing circuit, having a first input receiving the current sensor output signal and a second input receiving the selection circuit output signal, the summing circuit generating an output error signal corresponding to the difference between the selection circuit output signal and the current sensor output signal; and

a PWM inverter control circuit, receiving as an input the error signal and adjusting a PWM signal supplied to the inverter so as to cause the output current of the power module to minimize the magnitude of the error signal.

8. – 12. (Canceled).

13. (New) The method of claim 1, wherein the output current is measured using a Hall effect current sensor.

14. (New) The method of claim 1, further comprising the step of determining whether the current differences are higher than a offset before adjusting the output current of each device to match the output current corresponding to the highest output current signal.

15. (New) The circuit of claim 2, wherein the current sensor is a Hall effect current sensor.

16. (New) The circuit of claim 2, wherein the plurality of summing circuits are a plurality of summary amplifiers.

17. (New) The circuit of claim 2, wherein the plurality of controls circuits is a plurality of adjustable gain amplifiers.

18. (New) The circuit of claim 17, wherein the plurality of adjustable gain amplifiers is a

plurality of photo-FET devices.

19. (New) An uninterruptible power supply (UPS) comprising:

- a UPS frame having a plurality of bays;

- at least one intelligent battery module having at least one battery string, a fuse, and a relay, all connected in series, the battery module further comprising a microprocessor based controller for monitoring and controlling the battery module components;

- at least one power module comprising:

- a PWM-controlled inverter having a current sensor and having an output signal corresponding to an output current of the power module;

- a selection circuit having a first input receiving the output signal from the current sensor and having a second input receiving a signal corresponding to a highest output current of one or more other power modules connected in parallel with the power module, said selection circuit generating an output signal corresponding to larger of the current sensor output signal and the highest output current signal from the other power modules;

- a summing circuit, having a first input receiving the current sensor output signal and a second input receiving the selection circuit output signal, the summing circuit generating an output error signal corresponding to the difference between the selection circuit output signal and the current sensor output signal; and

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a PWM inverter control circuit, receiving as an input the error signal and
adjusting a PWM signal supplied to the inverter so as to cause the output
current of the power module to minimize the magnitude of the error
signal; and

wherein the battery modules and power modules may be accommodated in any bay of the
UPS frame.